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U.S. Bureau of Reclamation

Settlement of...Columbia Basin Reclamation Project

[Washington]

1944

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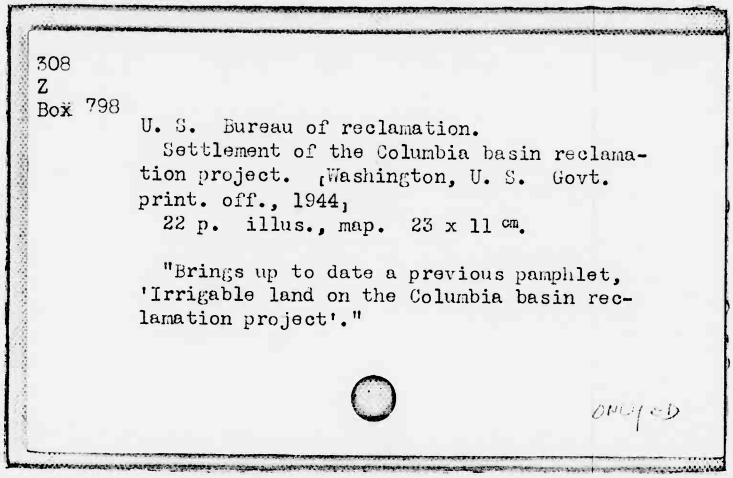


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# SETTLEMENT OF THE Columbia Basin Reclamation Project

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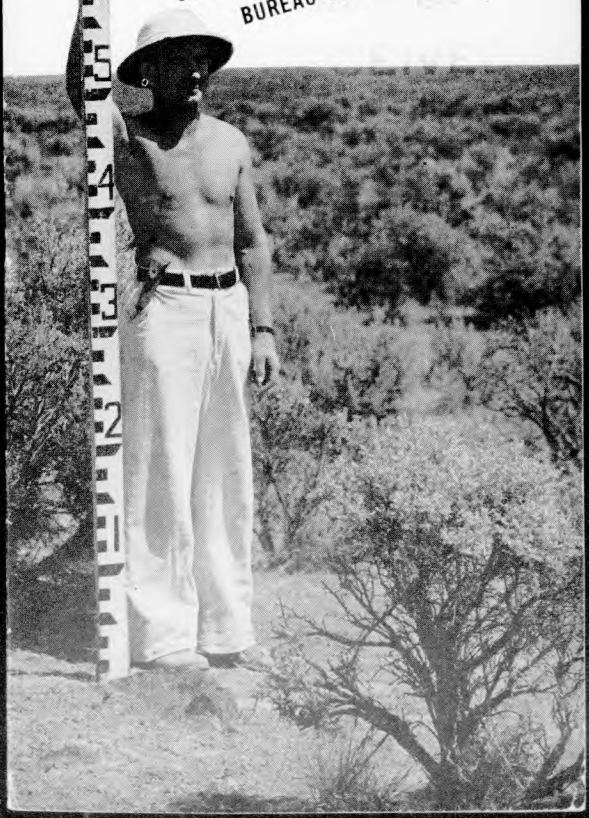
U. S. Department of the Interior
BUREAU OF RECLAMATION



# SETTLEMENT OF THE COLUMBIA BASIN RECLAMATION PROJECT

THE COLUMBIA BASIN PROJECT in south-central Washington is designed to transform more than 1,000,000 acres of dry land, much of it unproductive, into a well-watered, compactly settled, and highly productive region capable of supporting nearly a quarter million people on farms and in nearby towns. The project, the largest reclamation development ever undertaken in the United States, will be irrigated with water pumped from the Columbia River at Grand Coulee Dam.

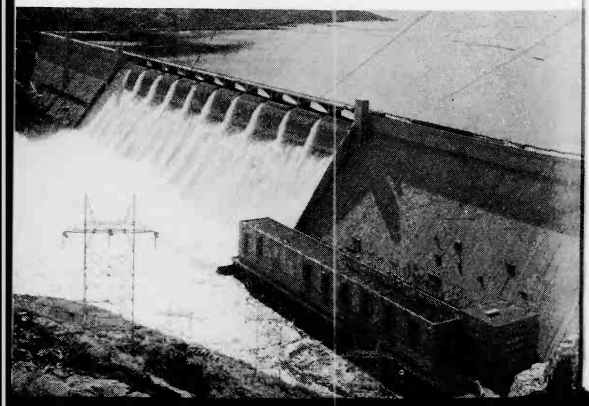
The development of the project has been retarded by the war and the construction of the irrigation system is contingent on war conditions. Originally, the program was to bring the land under irrigation over a period of 20 to 25 years but the demand in the post-war period for employment on public works and settlement opportunities in the Pacific Northwest may accelerate the rate of construction. The progress of construction will be dependent on appropriations by the Congress.

The project was authorized by the Rivers and Harbors Act of August 30, 1935, and reauthorized by the Columbia Basin Project Act of March 10, 1943.

Only Grand Coulee Dam, which is the key structure of the irrigation system, is completed. Construction of the dam was started in 1933 and was completed on January 1, 1942. The dam, 550 feet high, 4,173 feet long at the crest, and 500 feet thick at the base, is the world's most massive concrete structure. Since March 1941, the dam and power plant have been serving one of the project's major purposes—the supplying of electrical energy to towns and industrial plants of the Pacific Northwest.

**From the reservoir behind Grand Coulee Dam, world's most massive concrete structure, huge pumps will lift irrigation water for the project into a main canal leading to a balancing reservoir in the upper Grand Coulee.**





The power-generating capacity of about 800,000 kilowatts is a tremendous factor in the manufacture of aluminum and other critical war materials, and will be of great importance in the maintenance of widespread industrial activities and employment in the future.

## The Project Area

The land to be irrigated occupies great blocks of a project area which, in all, embraces 2,500,000 acres and is 50 miles wide, and 80 miles long from north to south. It embraces arid and semiarid lands lying in the Big Bend of the Columbia River. The airline distance from the middle of the project is somewhat less than 100 miles to Spokane and about 145 miles to Seattle. To Portland, Oreg., the airline distance is approximately 200 miles. The northernmost part of the area lies 50 miles south of the Grand Coulee Dam.

Parts of four counties are included in the project area. The three in which much the greater part of it lies are: Grant County, the seat of which is Ephrata; Adams, with county seat at Ritzville; and Franklin, where Pasco is the county seat. A small area at the extreme southern tip of the project, south of the Snake River, is in Walla Walla County.

## Segregation of Irrigable Lands

Within the project area there is a wide diversity in topography, soils, and other natural conditions. These have been carefully surveyed to determine areas suited to irrigation farming and areas not suited to that purpose. The lands found suitable for irrigation farming have comparatively gentle slopes and types of soil which experience elsewhere has demonstrated can readily be kept in a productive condition. The half of the project area found unsuited to irrigation includes lands with slopes too steep or broken, or with soils too shallow, too sandy, or too rocky for successful farming. The nonirrigable areas include two east-west trending ridges, the Frenchman Hills and the Saddle Mountains, which lie above the reach of the projected

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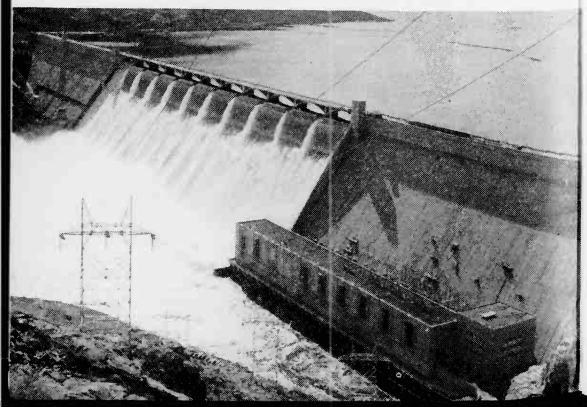

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canal system, and the rocky, "scabland" channels carved out by waters of the Columbia River drainage when they flowed through the area during the glacial epoch. The "Potholes", a wide expanse near the center of the project, within which there are active sand dunes, is also excluded from the area to be irrigated.

## Topography

The project as a whole is characterized by broad, smooth slopes and bench lands. The eastern third is part of a broadly rolling upland which rises gradually eastward far beyond the boundaries of the project. Slopes on that part of this upland which lies within reach of the projected canal system vary from gentle gradients at summit levels to steep hillsides along the lower portions of some of the intermittent stream courses.

Large tracts have smooth, even surfaces which will require little leveling to prepare them for water. At the other extreme, heavy leveling will be needed on some hummocky lands. The character of the surface has been taken into account in classifying the land. Areas of good soil which require heavy leveling have received a lower classification than those of equal soil which do not require heavy leveling. The slope of the land also enters into its classification. No lands with slopes in excess of 15 percent are classed as suitable for irrigation farming, and lands this steep are not classed as irrigable unless all other conditions are highly favorable for farming.

The altitude of the irrigable lands ranges from more than 1,500 feet above sea level at the northern edge of the project area to less than 400 feet near the junction of the Snake and Columbia Rivers. Thus the lands of the project have a general slope toward the south.

## Soils

Soils in the project area vary widely. They range from deep, fine, wind-blown materials to coarse sterile sand. Those found suitable for irrigation farming range from fine silt loams to loamy sand. Their depths vary from 2 feet to more than 15 feet. There are no areas of heavy, clay soils. As a whole, the soils are friable and free from alkali, and will respond well to irrigation farming.

The major types of soils are distributed in an irregular and scattered pattern throughout the project lands. The largest, nearly continuous block of first-class soil is made up of wind-deposited silty materials (loess) which blanket a strip from 4 to 12 miles wide along the eastern border of the project. The same type also occupies a comparatively small area in the northwestern corner of the project. Varying in texture from fine sandy loam to silt loam, these loessial soils are deep and highly fertile.

Deep alluvial soils, the materials of which have been washed largely from the loess, occupy the upper irrigable portion of the slope south of the Saddle Mountains, the gentle slopes in the vicinity of Quincy, and four other scattered areas. These silt loams, equally as fertile as the loessial soils, are free from rock and of excellent character for irrigation. In other areas, the largest of which is the slope south of the Frenchman Hills,

**The greater part of the floor of the upper Grand Coulee will be covered by the balancing reservoir—water stored between earth-fill dams 27 miles apart.**

comparatively fine alluvial materials are underlain by hard limy deposits. The depth of soil to this impervious layer varies from a few inches to several feet. The areas in which seepage difficulties might develop, because of insufficient soil depth, have been classified as nonarable and irrigation water will not be provided for them.

A brown sandy loam of high fertility has been laid down over a substratum of sand, gravel, or boulders in other portions of the project area. The larger soil bodies of this type are located on the bench at the southwestern end of the Saddle Mountain slope, in the northeastern part of the project, and in the north-central part. The depth of the soil varies, but in most places is less than 4 feet. Deep sandy loams and loamy sands predominate in the irrigable lands at the southern end of the project.

Only lands with soil of loamy texture, and of sufficient depth to be productive under irrigation, are included in the irrigable classes, the excessively sandy and shallow phases having been excluded from the areas to be irrigated, as have lands which are excessively stony on the surface.

## Climate

Scant rainfall, hot summers, and comparatively mild winters characterize the entire project area. Temperatures range from an average minimum in January of about 20 degrees above zero to an average maximum in July of about 91 degrees. Precipitation varies from less than 6 inches per year in the southwestern part of the area to a maximum of about 9½ inches in the northeast uplands. Most of the precipitation falls in late autumn rains and in the form of snow; very little occurs during the growing season. Except in limited areas, where wheat is grown under dry-farming methods, crops cannot be raised successfully without irrigation.

The most significant difference in climatic conditions within the project area is found in the length of period between killing frosts. This period, the effective growing season, varies from 135 to 150 days on the northeastern uplands to 175 to 190 days on some of the lower, south-facing slopes.

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## Land Ownership

About 90 percent of the land in the project area is privately owned. Most of the area was homesteaded during the latter part of the last century by persons who intended to develop dry-farms. Much of the land was unsuited to that purpose, however, and most of the farms were abandoned after a few years. Individual private holdings range in size from a few acres up to several thousand acres. A few large corporations are among the big landowners.

The remaining 10 percent of the land is owned by the Federal Government, by the State of Washington, and by counties. The State lands, for the most part, were granted for the support of schools. The county lands are those taken over because of nonpayment of taxes. None of the publicly owned land is open for homesteading.

Through provisions of the Columbia Basin Project Act (explained in another section of this pamphlet) it is anticipated that the Federal Government will purchase some large tracts of land in the project before development starts and will sell or lease to settlers on reasonable terms farm units which will be created from these tracts.

## Present Land Use

Grazing and dry-farming are the chief present uses of the project area. Lack of water for stock and scanty forage limit use of the greater part of the grazing land to spring sheep range. Grazing is the principal use of project lands in the western two-thirds of the area.

Wheat is the only important crop produced on the dry-farms of the project area. The land is cropped only once in 2 years but, nevertheless, yields are uncertain and generally low. Dry-farming is largely confined to the eastern and northwestern parts of the project area, where precipitation is above average for the project and where the soils are particularly retentive of water.

Small areas within the project boundaries are used for irrigation farming. Near Moses Lake about 3,000 acres are irrigated by pumping from the lake and from wells in the vicinity of the lake. There is another smaller project, which secures water by pumping from the Columbia River, near the southern tip of the project area. These small, established irrigation projects have not been included in the lands of the irrigation districts to receive water from the Columbia Basin Project.

## Towns, Railroads, and Highways

The total population of towns and farms within the project lands is approximately 10,000. About two-fifths of this total is concentrated in the southern tip of the area, in and near Pasco, the largest town in the project area. There are eight other incorporated towns in the project area, but none has as many as 2,000 habitants, and most of them have fewer than 400. These towns, spaced at about 20-mile intervals along the railroads, are minor trading centers. In addition, there are several unincorporated villages, which, in most cases, are merely

**Great expanses of sagebrush desert and abandoned farm lands will be reclaimed. (Not all land within the boundaries of the project, however, is suitable for irrigation farming.)**

crossroad hamlets or railroad sidings for grain elevators. Large areas of the more arid lands in the southwestern part of the project have no inhabitants. The rural population in the project area is largely confined to the dry-farming lands in the eastern and northern parts of the basin, and to the small irrigated areas.

The Columbia Basin is well provided with railroad transportation. Three transcontinental main lines cross it. The Great Northern Railway traverses the northern edge of the area, the Chicago, Milwaukee, St. Paul, and Pacific passes through the middle, and the Northern Pacific runs through the southeastern quadrant. The latter area is also skirted by the Spokane, Portland, and Seattle Railroad. A branch line of the Union Pacific enters the project area, and branch lines of the Northern Pacific and Milwaukee further increase the services available.

State Highway No. 7 runs along the northerly border of the project, United States Highway No. 10 crosses the north-central section, and United States Highway No. 395 crosses the southeasterly section. Highway bridges span the Columbia at Vantage on the west and at Pasco on the south; and a free State ferry is operated at Hanford. Secondary State highways and county roads form a loose network throughout the inhabited portions of the project area.

## Land Surveys

The Bureau of Reclamation has made four detailed surveys preparatory to occupation of the irrigable areas. In one survey, each section corner and each quarter section corner was reestablished and marked. There followed a topographic survey, in which each section was mapped with a 2-foot contour interval at a scale of 1 inch equals 400 feet. The topographic maps were used for a third survey, in which land was classified according to its suitability for irrigation. The fourth survey involved the appraisal of all lands classified as irrigable at dry-land values, without reference to their prospective irrigation, and the appraisal of improvements, if any.

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## Factors in Land Classification

A primary purpose of the land classification was to insure that water be delivered only to those lands on which irrigation farming can succeed. Accordingly, lands were classified as irrigable or nonirrigable. In addition, however, the irrigable land has been divided into three classes. In Class 1 are included the best arable lands, in Class 2 those of intermediate or average value, and in Class 3 the least desirable land for which it is proposed to provide a water supply. The recognition of different classes of irrigable land provides the basis for an allocation of construction charges, to be paid as a water assessment against the lands, in accordance with their capacity to provide repayment. Among the factors considered in making the classification were (1) soil texture, (2) soil depth, (3) alkali concentration, (4) stoniness, (5) angle of slope, (6) surface, in relation to leveling and grading problems, and (7) drainage. Although prospective drainage problems are given careful consideration in the land classification, it is recognized that not all such problems can be foreseen, and, accordingly, provision will be made by the Bureau of Reclamation for essential drainage works, if required. The soils were thoroughly examined both in the field and through laboratory analyses. To inspect the soils, at least one pit 5 feet deep was dug on each 40-acre tract; and where necessary to determine critical soil boundaries, additional holes were sunk. Soil data, other information on the lands, and the boundaries of classified areas are indicated on topographic maps, which may be obtained from the Bureau of Reclamation at a cost of 25 cents per section.

## Land Appraisal

The chief purpose of the land appraisal is to help insure that settlers obtain land in the project at fair prices. Construction charges for the irrigation works must be paid for each acre of land to which water is delivered. Any value added by irrigation or the prospect of irrigation properly belongs, therefore, to the person who develops the land and takes the responsibility for the payment of the construction charges. Appraised values range from less than $5 per acre for raw desert land to more than $30 per acre for some of the better land which is now suited to and used for dry-farming. Much of the raw land, however, will be equally good when cleared, leveled, and prepared for irrigation. Appraisal information for any tract of land in the project may be obtained free from the Bureau of Reclamation at Coulee Dam, Wash.

**Hundreds of abandoned farm buildings are scattered over the project area—mute reminders of farm families that settled on the land years ago, when a succession of wet years made the area appear to be adapted to agriculture without irrigation.**

**Under the Columbia Basin Project Act, the Government may purchase large blocks of land which will be subdivided into family-size units for sale or lease.**

## The Irrigation Works

The irrigation works will consist of a huge system of pumps, reservoirs, and canals. Only the key structure of the system, the Grand Coulee Dam, has been completed. It impounds water of the Columbia River for the production of electric power and the improvement of downstream navigation, as well as for irrigation. The river flows in a deep canyon, far below the level of much of the project land, and water must be raised a vertical distance of several hundred feet before it can be utilized for irrigation. The surface of the reservoir behind the dam is about 350 feet above the former level of the river. A huge pumping plant, using part of the power generated at the dam, will lift the water required for irrigation an additional 280 feet to a balancing reservoir in the Grand Coulee, an ancient channel of the Columbia River. As the river has its high-water season in the summer, both the water for irrigation and the power with which to pump it will be provided by surplus flood waters during the summer.

The balancing reservoir, some 27 miles in length, will have a usable storage capacity of 340,000 acre-feet, to adjust the supply of water from the pumps to the varying demands of the irrigation system. From the reservoir, irrigation water will flow by gravity to the canals of the project. Several main canals, and hundreds of lateral canals will serve different portions of the project area. Supplementary pumping from the main canals will permit irrigation of lands above the main canal levels.

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**Hundreds of abandoned farm buildings are scattered over the project area—mute reminders of farm families that settled on the land years ago, when a succession of wet years made the area appear to be adapted to agriculture without irrigation.**

**Under the Columbia Basin Project Act, the Government may purchase large blocks of land which will be subdivided into family-size units for sale or lease.**

added by irrigation or the prospect of irrigation properly belongs, therefore, to the person who develops the land and takes the responsibility for the payment of the construction charges. Appraised values range from less than $5 per acre for raw desert land to more than $30 per acre for some of the better land which is now suited to and used for dry-farming. Much of the raw land, however, will be equally good when cleared, leveled, and prepared for irrigation. Appraisal information for any tract of land in the project may be obtained free from the Bureau of Reclamation at Coulee Dam, Wash.

## The Irrigation Works

The irrigation works will consist of a huge system of pumps, reservoirs, and canals. Only the key structure of the system, the Grand Coulee Dam, has been completed. It impounds water of the Columbia River for the production of electric power and the improvement of downstream navigation, as well as for irrigation. The river flows in a deep canyon, far below the level of much of the project land, and water must be raised a vertical distance of several hundred feet before it can be utilized for irrigation. The surface of the reservoir behind the dam is about 350 feet above the former level of the river. A huge pumping plant, using part of the power generated at the dam, will lift the water required for irrigation an additional 280 feet to a balancing reservoir in the Grand Coulee, an ancient channel of the Columbia River. As the river has its high-water season in the summer, both the water for irrigation and the power with which to pump it will be provided by surplus flood waters during the summer.

The balancing reservoir, some 27 miles in length, will have a usable storage capacity of 340,000 acre-feet, to adjust the supply of water from the pumps to the varying demands of the irrigation system. From the reservoir, irrigation water will flow by gravity to the canals of the project. Several main canals, and hundreds of lateral canals will serve different portions of the project area. Supplementary pumping from the main canals will permit irrigation of lands above the main canal levels.

## Water Charges

Charges for water on project lands will depend upon the construction costs allocated to irrigation and the annual cost of maintaining and operating the water distributing facilities. It is estimated that construction costs chargeable to irrigation, which must be repaid to the Government by water users on project lands, will average about $85 per acre. It is planned to vary this acreage charge in accordance with the productive capacity of the different classes of land. Thus, the charge will be greater than $85 per acre for Class 1 land, and less than $85 per acre for Class 3 land. These charges will be levied against the land as water right assessments. Payment, however, will be made in annual installments over a period of 40 years, without interest. Moreover, payment of the first installment may be deferred by the Secretary of the Interior for not to exceed 10 years after water is first delivered.

Charges for operation and maintenance of the irrigation system, however, must be paid from the first. These charges, it is estimated, will be about $2.60 per acre per year. Construction charges, when payments are started, will be over and above operation and maintenance charges. These may average $2.13 per acre annually. The two together will average less than $5 per acre per year, current studies indicate. Other costs involved in irrigation farming include purchase or lease of the land, clearing and leveling of the land, construction of farm ditches, homes, buildings, fencing, etc.

## Probable Rate and Order of Land Development

Because of war conditions, definite forecasts as to the time water will be available for the project lands are impossible at this time. The original plan was to bring about 50,000 acres under irrigation annually for the first few years of the development. This schedule may be accelerated in the post war period to provide work on construction and settlement opportunities for returning service men and demobilized industrial workers.

The order in which lands will be supplied with water depends upon their location with reference to the canal system, and upon other conditions. The two main canals will be built from north to south so that, in general, lands adjacent to the northerly portions of these canals will receive water before the lands along the southerly portions. However, along any portion of a main canal, the lands lying above the canal, to which water must be lifted by pumping, will undoubtedly be irrigated at a later date than the lands which lie below canal level and which can be served by gravity. Furthermore, it is expected that a separate development, using water pumped directly from the Columbia or the Snake River, will be made at an early date in the southern part of the project area which could not receive water through the main canal system for many years. In view of these and other conditions affecting the order of land development, it is advisable for anyone interested in the approximate time at which a given tract may receive irrigation water to write to the Bureau of Reclamation Coulee Dam, Wash., for such additional information as may be available.

**All land in the project area has been resurveyed by the Bureau of Reclamation, examined and classified as to adaptability to irrigation farming, and actual values have been determined by competent appraisers.**

## Irrigation Districts

Three irrigation districts, each embracing roughly one-third of the project area, have been established under laws of the State of Washington. They are known as the Quincy-Columbia Basin Irrigation District, the East-Columbia Basin Irrigation District, and the South-Columbia Basin Irrigation District. They are the organizations of land owners through which official dealings are made with the Federal Government, and through which are handled various matters relating to the affairs of the land owners and water users. Contracts for the repayment of construction charges allocated to irrigation are made between the districts and the Federal Government (see "Contracts", page 20). The districts may ultimately take over the management of a large part of the water distribution system.

## Prospective Crops and Livestock

The crops and stock adapted to the project area are those which have been successfully produced under comparable natural conditions on other irrigation projects in the Northwest. Types of farming which combine livestock and crop production seem to have greatest promise. On other projects where experience affords an indication of what will prove successful in the Columbia Basin, at least half of the farm land is in alfalfa and other forage crops.

The eastern part and some of the northern parts of the Columbia Basin Project area have natural conditions comparable to much of the Boise Project in Idaho. There, diversified livestock and crop farming predominates. In one district in the Boise Project, where the soils are comparatively shallow and where dairying is of major importance, almost 75 percent of the irrigated acreage is used for alfalfa, pasture, and other forage crops; about 20 percent for cereals (wheat, barley, corn, oats, and rye); and the small remaining area for other crops. In another district which has deeper lighter soils, and where row crops are of more importance, about 50 percent of the irrigated

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area is given to forage crops; 25 percent to cereals; and 25 percent to seeds, fruits, and nuts, and sugar beets, potatoes, and other vegetables.

Although dairy cattle are the leading stock in both of these districts of the Boise Project, other kinds of stock are raised. In the district where dairying is the major enterprise, for each 100 acres of irrigated land there are 27 head of dairy cattle, a few head of farm beef and of farm sheep, and about 15 hogs. In the other district, the number of dairy cattle per 100 acres of irrigated land is about half as great (13). However, there are 12 farm sheep and 18 hogs per 100 acres; and considerable numbers of range beef and range sheep are fed on farms of the district.

## Nearby Irrigation Experience

The Sunnyside Division of the Yakima Project in Washington has physical conditions not unlike those of the slopes and benches in the Columbia Basin Project which lie at intermediate altitudes between the Pasco Slope and the higher lands northeast. In the Sunnyside Division, about 57 percent of the irrigated acreage is given to forage crops, and about 18 percent to cereals. The remaining 25 percent is divided roughly as follows: Apples, 2 percent; peaches, pears, and small fruits, 9 percent; potatoes, 2 percent; asparagus and other vegetables, 9 percent; and miscellaneous crops, including sugar beets and hops, 3 percent. For every 100 acres of irrigated land in this Division, there are maintained approximately 22 dairy cattle, 7 farm sheep, 21 hogs, and a few head of farm beef. In addition, a few head of range beef and about 45 range sheep are fed per 100 acres of irrigated land.

The comparatively small southern part of the project area known as the Pasco Slope has natural conditions very much like those of the Kennewick Highlands Division of the Yakima Project, just across the Columbia River. In comparison with the other districts noted, larger proportions of the Kennewick Highlands Division are used for the production of cherries, grapes, and asparagus, lettuce, and other specialized truck crops.

Although the natural conditions in the project area are suited to a rather wide diversity of crops and stock, it is obvious that success with any of them will also depend upon market outlets. These are being given careful study so that information will be available to indicate which of the alternative crops and stock can be more profitably produced. It seems apparent, for example, that in view of present production and prospective prices, the planting of apple orchards is likely to prove a far less profitable undertaking than one or more of several possible combinations of livestock and crops. The information being obtained on those farm enterprises which hold most promise for a continued satisfactory farm income will be available to settlers before irrigation water is delivered.

## Electricity and Domestic Water

Because of the large block of power generated at Grand Coulee Dam, the cost of electricity on Columbia Basin farms is expected to be relatively low. Studies to determine the most efficient method of distributing the energy to the rural



areas are under way. At present nearly the entire output of the power plant is being consumed by war industries. Power revenues will help repay a sizeable portion of the construction cost of the dam and irrigation features.

The most economical and practical method of supplying domestic water to the settlers on the project is also being studied. It is tentatively estimated that the average per unit cost of well and pumping equipment will be at least $1,000 and may exceed $2,500. In those areas in which the cost of drilling an individual well for each farm is prohibitive, it may be found desirable to serve several farms from a common distribution system.

## Investigations of Settlement Problems

Settlers on the Columbia Basin Project will benefit from the most comprehensive planning investigations ever undertaken for an irrigation project. Before water is delivered to the first settler, information and assistance will be available to help him in the solution of problems he will face in the development of his farm. The planning studies, known as the Joint Investigations, are being conducted under the direction of the Bureau of Reclamation by representatives of many agencies which are familiar with the problems and with means to solve them. Participating in the Joint Investigations are the Bureau of Reclamation, several bureaus of the Department of Agriculture, and various other Federal agencies; the State College and Experiment Station of Washington, the University of Washington, the State Department of Conservation and Development, the State Department of Highways, and other State departments; national, regional, and State planning groups; and a large number of other State and local agencies.

It is not to be supposed that the programs of information and assistance which will be developed as a result of these studies will guarantee the success of any settler, will produce any get-rich-quick schemes, or will do away with hardships and long hours of hard work which are associated with the develop-

**Lands within the boundaries of the project have been proved to be suited to irrigated farming by enterprising operators who have diverted small streams, or have pumped water from lakes or from deep wells. Hot summer days and long frost-free growing seasons produce excellent crops when irrigation is practiced.**

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## Columbia Basin Project Act

Legislation which will govern the development and settlement of the Columbia Basin Project was approved by President Roosevelt on March 10, 1943. Known as the Columbia Basin Project Act, this legislation supersedes the Columbia Basin Anti-Speculation Act of May 27, 1937. Although the latter was correct in its objective, the Congress felt that a new law was needed to supplement and to strengthen several important provisions of the original legislation.

The major purposes of the new act are to provide for the orderly settlement of the project, to protect settlers from paying excessive prices for the land, and to render more secure the investment of the Federal Government in the development. Experience on other reclamation projects has been that settlers who are overloaded with unnecessary debt in land that does not represent sound values have small chance of maintaining themselves and their families and repaying the construction costs.

The legislation provides for the appraisal of all lands in the project at their dry-land value, without reference to proposed irrigation development. It also limits to a family-size tract the amount of land for which one owner may receive water.

Under this act, no construction of irrigation features of the project, except the Grand Coulee Dam (already completed), the pumping plant at the dam, the balancing reservoir, and a canal leading from the pumping plant to this reservoir can be undertaken until *repayment contracts* between the Government and an irrigation district or districts or a conservancy district are entered into and validated by the Courts. No water can be delivered to any project land until the owner thereof has entered into a *recordable contract* with the Government.

The Columbia Basin Project Act is explained under several headings in question and answer form as follows:

## Purchase and Sale of Land

### From whom may land be purchased?

Until the Government is prepared to sell land secured under the provisions of this act, purchases can be made only from private owners. About 90 percent of the project area is privately owned. There is no advantage in hurriedly purchasing land now because water probably will not be available for several years. A large pumping plant, reservoir dams, and an

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extensive canal system remain to be built, and it is impossible, because of the war, to predict when these facilities can be constructed and water made available.

### Will the Government have land for sale or lease?

Yes, the Columbia Basin Project Act authorizes the Secretary of the Interior to purchase excess land at the Government-appraised value, divide it into family-sized farm units, and resell it to settlers. Prior to the time water becomes available, a considerable portion of the area probably will be so subdivided and sold. The act further authorizes the Secretary to lease these lands, to establish town sites, and to dedicate portions for public use. The Government land-purchase program cannot be put into effect until Congress makes funds available. The Government does not now maintain a list of lands available for sale, and the project area is not open to homestead entry.

### What does the act require when land is purchased or sold?

In any transaction involving the transfer of lands covered by the individual recordable contract (which the landowner must sign with the Government before water will be delivered to his land and whereby he agrees to provisions of this act) either the purchaser or the seller must, within 30 days from the date the sales agreement is signed, file an affidavit with the county auditor, describing the terms of the sale and the consideration involved. Fraudulent misrepresentation in the affidavit is a misdemeanor, punishable by fine or imprisonment. (Provisions of the individual recordable contract are explained under "Contracts," beginning on page 20.

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**What restrictions govern the sale of land?**

For 5 years from the date water becomes available to his land, a landowner who has signed the individual recordable contract with the Government is not permitted to sell his land for more than the Government-appraised value plus the value of such improvements as have been added. If he does so, the Secretary of the Interior has the authority to cancel the right of the land to receive water, and the buyer may recover the amount paid above the Government-appraised value. If the purchase has been made on terms, the buyer cannot be held liable for payments in excess of the Government-appraised price. At the expiration of the 5-year period a landowner may dispose of his land at any price.

**Will water be delivered to land purchased at a price exceeding the Government-appraised value?**

If the purchase is made after the individual recordable contract is signed, the Secretary of the Interior has the authority to cancel the right of the land to receive water, at any time within 2 years after the contract or deed is filed with the county auditor as required by this law. If the purchase is made before the individual recordable contract for the land is signed, water will be provided but only on the signing of a recordable contract requiring that future transfers be at not to exceed the appraised values. Moreover, any person who buys land at prices above Government-appraised value is making a bad bargain, needlessly paying more for the land than an impartial board of appraisers has found it to be worth, and loading himself with a burden that may endanger his chances for success at irrigated farming.



As on the nearby Kittitas Division of the Yakima project, dairying is expected to be of major importance on the new farms of the Columbia Basin.

**At what price may land be sold if a landowner has made improvements on it during the 5-year period after water becomes available?**

A landowner may sell his land at the value established by a new appraisal, which will be made upon request to the Secretary of the Interior at a cost of $15 for each quarter section. In such reappraisal the Secretary will take into account, in addition to the value found in the first appraisal, the improvements made, the irrigation charges paid, and other items of value, other than the increased value resulting from construction of the project.

## Protection Against Land Speculators

**How does this act protect a person against paying excessive prices for land covered by the individual recordable contract?**

If land is sold at a price exceeding the Government-appraised value after the individual recordable contract has been signed the purchaser is not obligated for that part of the sales price in excess of the Government-appraised value. In case the buyer is paying for the land on the installment plan he may not be forced to make payments for the amount due in excess of the Government appraisal. If the seller has collected more than the Government-appraised price, the purchaser, within 2 years after the contract is signed, may recover through the courts, or otherwise, the amount paid in excess of the Government-appraised price.

**How may a would-be purchaser of land not covered by the individual recordable contract protect himself against paying excessive prices for land?**

Every person urged to buy land in the Columbia Basin project should send a legal description of the tract to the Bureau of Reclamation, Coulee Dam, Washington, with a request for classification and appraisal information. No one should purchase land without taking this precaution. There is no charge for this service.

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For 5 years from the date water becomes available to his land, a landowner who has signed the individual recordable contract with the Government is not permitted to sell his land for more than the Government-appraised value plus the value of such improvements as have been added. If he does so, the Secretary of the Interior has the authority to cancel the right of the land to receive water, and the buyer may recover the amount paid above the Government-appraised value. If the purchase has been made on terms, the buyer cannot be held liable for payments in excess of the Government-appraised price. At the expiration of the 5-year period a landowner may dispose of his land at any price.

**Will water be delivered to land purchased at a price exceeding the Government-appraised value?**

If the purchase is made after the individual recordable contract is signed, the Secretary of the Interior has the authority to cancel the right of the land to receive water, at any time within 2 years after the contract or deed is filed with the county auditor as required by this law. If the purchase is made before the individual recordable contract for the land is signed, water will be provided but only on the signing of a recordable contract requiring that future transfers be at not to exceed the appraised values. Moreover, any person who buys land at prices above Government-appraised value is making a bad bargain, needlessly paying more for the land than an impartial board of appraisers has found it to be worth, and loading himself with a burden that may endanger his chances for success at irrigated farming.



As on the nearby Kittitas Division of the Yakima project, dairying is expected to be of major importance on the new farms of the Columbia Basin.

**At what price may land be sold if a landowner has made improvements on it during the 5-year period after water becomes available?**

A landowner may sell his land at the value established by a new appraisal, which will be made upon request to the Secretary of the Interior at a cost of $15 for each quarter section. In such reappraisal the Secretary will take into account, in addition to the value found in the first appraisal, the improvements made, the irrigation charges paid, and other items of value, other than the increased value resulting from construction of the project.

## Protection Against Land Speculators

**How does this act protect a person against paying excessive prices for land covered by the individual recordable contract?**

If land is sold at a price exceeding the Government-appraised value after the individual recordable contract has been signed the purchaser is not obligated for that part of the sales price in excess of the Government-appraised value. In case the buyer is paying for the land on the installment plan he may not be forced to make payments for the amount due in excess of the Government appraisal. If the seller has collected more than the Government-appraised price, the purchaser, within 2 years after the contract is signed, may recover through the courts, or otherwise, the amount paid in excess of the Government-appraised price.

**How may a would-be purchaser of land not covered by the individual recordable contract protect himself against paying excessive prices for land?**

Every person urged to buy land in the Columbia Basin project should send a legal description of the tract to the Bureau of Reclamation, Coulee Dam, Washington, with a request for classification and appraisal information. No one should purchase land without taking this precaution. There is no charge for this service.

On other projects having comparable natural conditions to that of the Columbia Basin, for instance, the Klamath project in Oregon-California, at least half of the farm land is in alfalfa.

**What is the penalty for selling land under false pretenses?**

Fraudulent misrepresentation in the affidavit that must be filed with the county auditor within 30 days after a sales contract is signed, as to the true value of land covered by individual recordable contract, constitutes a misdemeanor punishable by a fine not exceeding $500 or by imprisonment not exceeding six months, or by both such fine and imprisonment.

## Size of Farms

**How much land may one person own?**

The new law provides that the Secretary of the Interior shall subdivide the land into farm units of such size, considering the soil, topography, location, and other relevant factors, as will support an average-sized family at a suitable level of living. The maximum area permitted in any unit is 160 irrigable acres, but it is probable that the average size will not exceed 80 acres. Water will not be delivered to more than one farm unit held by any one landowner, except under certain conditions where the land remains in the same ownership as prior to May 27, 1937, but in no event to more than 160 acres in a single ownership.

**Is this a change from the previous law?**

Yes, an important change. The former law allowed only 40 acres per individual or 80 acres for a man and wife, regardless of the character of the soil or other conditions. Studies carried on under the Columbia Basin Joint Investigations indicate that such a rule for determining the size of farm would not result in the most effective land use, nor provide, in some cases, sufficient area from which a family could make a living.

**Are there exceptions to the provisions restricting ownership to a single "family-sized" unit?**

Yes, the new law recognizes the fact that present owners should have some consideration given them in the matter of retaining a larger area of their holdings than was previously provided. Owners of record on May 27, 1937 (the date of the original anti-speculation act), may retain up to 160 acres of irrigable land even though it is included in two or more farm units. Should those owners later sell, the new owner would be entitled to hold only one farm unit.

**Is a man, his wife, and his children each entitled to own a farm unit?**

No. One family may own only one farm unit. A family is defined in the act as being a group consisting of either husband or wife, or both, together with their children under 18 years of age. If a child is over 18, he may acquire a farm unit of his own.

**How may a person owning more land than the act allows qualify for water?**

He must agree to dispose of his excess land, at Government-appraised prices. Under the act, no water will be delivered to

**Homes for thousands of self-sustaining farm families will be created through the development and settlement of the vast project.**

the lands of any person who does not agree to conform his farm to the size permitted. He must either dispose of his excess holdings himself, or authorize the Secretary of the Interior to do so. The Government, in turn, may subdivide the holdings into family-size units, for resale or lease to qualified settlers.

## Farm Plats

**What other restrictions, in addition to limitations on farm sizes, does the act contain?**

Water will not be delivered to a farm unit not conforming in boundaries to the project pattern laid out in advance by the Secretary of the Interior. Prior to the initial delivery of water to a specified block of land, the Secretary will prepare a plat of all farm units in that block. A notice announcing his plans to establish such a plat must be printed in six weekly issues of a newspaper of general circulation in the counties in which the area is situated, and the plat must be made available for inspection at the county auditor's office.

**What recourse is open to a landowner who doesn't approve of his farm plat?**

He may file a written objection to the plat with the county auditor of the county in which the lands are situated. This must be done before the notice that the Secretary of the Interior is filing a plat is printed in the newspaper for the last time. The Secretary will consider all objections filed, then draw the plat in final form, and file it with the county auditor.

## Selection of Settlers

**How will purchasers of Government land be selected?**

A study of how land purchasers should be selected is now in progress. On other Bureau projects where public land is made available, an examining board, appointed by the Secretary of the Interior, considers the fitness of each applicant. On such projects an applicant generally must possess good health, and have had at least two years' actual experience in farm work

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and farm practice. He must have at least $2,000 in money free of liability, or the equivalent thereof in livestock, farming equipment, and other assets deemed to be as useful to the applicant as money.

**When will setters be selected?**

Probably not until it is possible for the Government to set a definite date for the initial delivery of water to the land. Because of the war and other factors, the date when water can be delivered cannot be predicted at this time.

**Are war veterans given preference?**

No; not under existing law (1943). Legislation is pending in Congress which seeks to extend certain preference rights in the settlement of public lands to veterans who will be honorably discharged from service in the present war. The Bureau of Reclamation is now giving study to this legislation and to the whole problem of preference rights for veterans in the settlement of public lands, with a view to submitting appropriate recommendations to the Secretary of the Interior in connection with representations he may make on this subject to the Congress.

**If land is purchased from a private owner must a settler meet Government requirements for qualified settlers?**

No. Any person, however, who cannot meet the above Government qualifications for settlers should consider well before investing in Columbia Basin project lands.

## Land Preparation, Crops, and Financing

**Will the Government clear or level the land, or provide a house, electricity, or drinking water?**

There are no provisions in the existing law that authorize the Government to provide these facilities.

**Will the Government provide financing?**

The act does not contain provisions which authorize the Secretary of the Interior to extend financial aid to new settlers. Qualified farmers on Columbia Basin project lands probably will be eligible in the same manner as farmers elsewhere for the Federal aid which may be in effect when the project is being developed or in operation. Such a program, however, is dependent on congressional action.

## Contracts

**What must the irrigation districts do before water can be delivered?**

Construction of certain irrigation features, mainly canals and laterals, cannot be started until the irrigation or similar districts have signed contracts with the United States, agreeing to repay that part of the construction costs of the project allocated by the Secretary of the Interior as repayable by irrigation. The pumping plant at Grand Coulee Dam and dams at each end of the Grand Coulee to form an equalizing reservoir are authorized for construction under existing law.

Irrigation farming is a highly specialized type of agriculture. The proper application of the artificial supply of water to the land requires skill and long hours of hard work. This farmer is irrigating lettuce on the Yuma project in Arizona.

**What provisions will the contracts between the United States and the irrigation districts contain?**

The repayment contracts will provide, among other things, that the cost of the construction of the project to be repaid by irrigation must be repaid in installments, without interest, over a period not to exceed 40 years. Payment of these installments may be deferred by the Secretary of the Interior during the development period, which cannot exceed 10 years from the time water is first made available. During this period water would be delivered on the payment in advance of an annual charge per acre-foot of water, set with the object probably of meeting at least the operation and maintenance charges.

**How are the contracts between the United States and the irrigation districts negotiated?**

After the terms of the contract have been agreed upon between the Government and the board of directors of each irrigation district, an election is held, at which every landowner is entitled to vote on the question of authorizing the board of directors to enter into the proposed contract on behalf of the district. Individual land owners do not actually sign this district repayment contract.

**What other contracts must be signed before water can be delivered?**

As a condition precedent to receiving water, each landowner will be required to sign an individual recordable contract with the Government, wherein he agrees to conform his land by purchase, sale, or exchange, at Government-appraised values, to the area and boundaries laid out in advance by the Secretary of the Interior. He must also agree as a part of the recordable contract to dispose of excess land then and thereafter held by him, at the Government-appraised value and to give the Secretary of the Interior power of attorney to sell such lands for him, together with an option to buy it for the United States.

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Such transactions are to be for cash and at the Government-appraised value. The landowner must further agree that he will not sell any of his land, whether excess or nonexcess, for more than the Government-appraised value for five years after water becomes available for it. He also is required to file with the county auditor within 30 days after the sales contract is signed an affidavit describing the terms of any sale or exchange and the consideration involved. The recordable contract must be executed within six months from the date the district in which the land is located signs the repayment contract with the United States.

**May a landowner withdraw from the irrigation district?**

Yes; he may do so by filing a written notice of withdrawal of his land with the board of directors of the irrigation district within which his holdings are located. This notice must be filed on or before a date fixed by the district and announced in the notice of election, that date to be between a date 10 days after the notice of election is given and the election date. Land so withdrawn will not be entitled to receive water from the project while it remains in private ownership.

**If a member of the irrigation district hasn't signed the recordable contract, is he subject to district assessments?**

Under this act each district is permitted to include in its contract provisions making all lands within the district, whether covered by individual recordable contracts or not, subject to assessments to the same extent as lands eligible to receive water.

**How does a land purchaser become a member of the irrigation district?**

If the land he purchases was included in the district at the time it was organized, it is automaticaly included in the district and will remain in the district unless he files a written notice of withdrawal (as explained above).

**Can a member of the irrigation district be held liable for any assessments before water is made available for his land?**

Yes, his land is subject to such assessments as the district may impose. After water is made available for his land, and regardless of whether he farms his land or not, he is liable for construction and operation and maintenance charges in the same manner as other land within the district.

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**Every person who is approached with a proposal to buy land in the Columbia Basin should write to the Bureau of Reclamation at Coulee Dam, Wash., giving a legal description of the tract in which he may be interested, and requesting classification and appraisal information, before signing a purchase contract.**

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